10: d'Orleans--338 [2] T-3 (1891-92) 1894 Laos
116, 326, 402, 644

[LSS: in Luang Prabang] "There are several artisans in this quarter, and we were taken to see a goldsmith, the bellows of whose forge consisted of the trunk of a hollow tree with a piston inside, and he tells us that he had left the king's service because he was so irregularly paid."

"The wooden panels which formed the walls, the corbels, and 341
the beams were all carved with great delicacy. This pagoda was 346
as pretty in the fineness of its details as it was elegant in its gen- 172
eral lines.

"But nothing is left of it" (1).

1. Cf. G. Maspero, L'Indochine /Un empire colonial francais: l'Indochine, Paris, 1929-1930/, p. 186.

Sculpture. For these sanctuaries, the Laotians made hordes of 532
statues out of stone, brick, and especially bronze, which were 175*
wholly or partly covered with gold. Of the latter, which were al-
ways molded from wax models, some attained gigantic size. /127/
All of them strike the various attitudes of the Buddhist liturgy. The
bodies are sketchily draped and may be seated, standing, walking
or lying down, their arms outspread. The faces are surmounted by
a sort of tiara and are frozen in a hieratic smile which is not very
expressive and seldom varies.

Painting. As for the fresco paintings which brighten the walls
of certain pagodas, they are not of any special interest. Most of /177/
them were "primarily the work of Burmese, Cambodians or Chinese
of whom the native artists (were only) the pupils" (1).

1. Cf. L. de Reinach, op. cit. /Le Laos, posthumous edition, Paris, 1911/, p. 342.

The art of the gold and silver smith. On the other hand, the 326
Laotian jewelers and silversmiths knew and still know, with only
the most meager of tools, how to work gold and silver admirably--
primarily silver--and how to chase and engrave it. Their motifs
show an attractive decorative invention, and it is chiefly in this
"minor art" which borders on small-scale industry that we find the
most original manifestations of old-time Laotian life /128/ --
betel services, vases, cups, sword and dagger hilts; bracelets,
necklaces, rings, headpins, earrings, etc.

Basketwork and weaving. Finally, "like all the peoples of the 285
Far East, the Laotians are skilled in all kinds of basketwork. A 531
very pretty object which seems to be peculiar to this land is the
small basket for women in which the basketwork is covered with

13. Sources of Sulphur

316 Sources of sulphur have been noted in the provinces of Cammon, Saravane and Darlac.

As a supplement to this list, the reader is referred to Appendix XXI, in which several goldbearing deposits are noted which have been prospected, but for which concessions have not yet been granted and which are not being worked by any European enterprise. We shall now continue with a consideration of the conditions under which various other deposits, such as iron and salt, occur.

Iron. The various iron deposits which exist in Laos are alluvial deposits caused by the erosion of rocks under the action of rain water and water courses. They occur sometimes in hills from two to three hundred meters high, and sometimes in hillocks of a lesser height which do not exceed fifty or sixty meters.

The ore is found scattered throughout the mass of reddish clay alluvia, in flint nodules and isolated blocks of small dimensions. The richest ores are formed of irregular masses of a reddish cellular rock somewhat similar to millstone rock, but softer.

The ore is extracted in furnaces provided with alternating blowers. These are first loaded with a layer of crushed and washed ore, then a layer of charcoal, and the layers are thus repeated several times. When the process has been completed a bloom of spongy iron is left at the bottom of the furnace, and this iron is reheated and puddled. When the molten mass is sufficiently homogeneous, blacksmiths take it and transform it into farming implements--axes, machetes, etc.--all of which are sold locally.

[326] [439] Production from the iron deposits in Laos is not sufficient for the needs of local consumption, since [319] [Illustration] [320] [Blank page] [321] iron is imported from Europe in small bars and sold for from 1 franc 30 centimes to 1 franc 50 centimes per kilogram.

It is unlikely that the country's iron deposits, at least those which have so far been discovered, will ever justify exploitation by European methods, because of their insufficient size.

317 Salt. The same is true in the case of salt, and the country's production is insufficient for local consumption.

The salt mines, or, to use the proper term, saltbearing deposits are of three different kinds:

326
306 **Gold and silver smiths and jewelry-making.** In nearly all the large centers there are gold and silver smiths who are also jewelry-makers. They work either on their own behalf manufacturing articles which they then sell, or else on order for individuals who wish to transform silver coins which they have saved over the years, or native gold which they have obtained by gold-washing or purchase, into gold and silver articles or jewelry.

The Laotian silversmiths and jewelers use very few tools. A bellows, a crucible, a few pairs of tongs, some drawplates, caulking chisels, graving tools and hammers are all they need to cast, forge, braze, draw, laminate, chase, and checker gold and silver.

The different phases of the work include casting the metal either with or without alloy (1), laminating it with a hammer and drawing

(1) The alloys are tin and copper for silver, and always silver for gold.

it partly with a hammer and partly with a drawplate, embossing it, chasing it, checkering it, brazing on filigree or globular ornaments, and giving a patina to and burnishing the finished product.

The patina is obtained on silver by dipping it in lemon juice and tempering it while hot in a strong alum solution.

Gold jewelry is usually covered with a reddish patina which has a very warm color. This is obtained by tempering it in boiling water containing, by weight:

2 parts of saltpeter.
3 parts of salt.
1 part of alum.
Sufficient quantities of sulphur.

[53] [456] All the artists work from uniform models. The decorative motifs are taken from Brahminic tradition, with a few modifications arising out of the introduction of certain elements which are derived from Chinese art.

Yet the Laotians are capable of producing work which is not based on their usual models. Thus a great many jeweler-goldsmiths can reproduce designs which are different in shape, appearance and style from the common types which are handed down from father to son or from master to pupil.

The usual gold and silver articles include betel services, vases, cups, boxes, knife handles and sword hilts. Generally these objects are made of silver, but sometimes also of gold. The jewelry includes

326 bracelets, necklaces, rings, long neck chains and chignon chains,
306 hairpins, buckles, buttons, earrings, etc., either of gold or of silver.

The purity of the metals used in this work varies widely, and is usually left to the choice of the person who commissions the work. In some cases gold is left free of any alloy, while often a fourth part of silver is used and sometimes even more.

Silver taken from coins is left as pure as it was originally, or else its purity is decreased by alloying it with copper and tin.

The precious stones used in jewelry include sapphires, rubies, quartz, crystal, onyx, glass and even basalts. Cutting facets on gems is unknown in Laos, and only cabochon cutting, which may be more or less regular, is practiced.

326 Ironmongery. The blacksmiths of Laos are quite skillful. Their extremely scant equipment includes a double-action bellows, one or two pairs of tongs, two or three hammers, a hot set and a small anvil. They use only wood charcoal.

By taking plenty of time they are nevertheless able, using bars of soft iron imported from Europe, deadheads, and "Duongs" which come from the high primitive furnaces [457] of the Koui region, to forge various tools and utensils such as machetes, swords, knives, scissors, spades, bits, elephant halters, carnac hooks, etc.

Each blacksmith has his own specialty. With the help of routinism and by virtue of constant repetition of the same forms, these artisans manage to acquire a real skill and to utilize every last scrap of iron. It should also be noted that iron is very expensive. It costs from 30 to 70 francs per hundred kilograms in Laos, and sometimes as much as 90 or even 110 francs.

A certain number of articles, such as plowshares, spade irons, axes, etc. are imported from China and Siam.

323 Pottery. The pottery industry is very active, and in spite
415 of the many imported pots made of wrought, enamel or cast iron or copper, the industry still makes a large number of pots and vases of every size and shape which are destined for various uses.

The potters of Laos produce glazed jars which serve as receptacles for alcohol and water, water coolers, flower vases, drinking mugs, oil lamps, cuspidors, smooth and rough mortars, tiles, brick, drains, [439] ornamental modillions, etc. The products of this industry are mainly destined for local consumption. Some of them, however, also find markets in nearby countries.

323 The potters' methods and equipment do not differ from those which are in widespread use everywhere.

The method of firing depends on the nature of the article, and firing may be done either in kilns dug out of the clay soil, in the banks of watercourses, or under stacks of rice straw. Wood or rice straw is used to fire the kilns.

In some regions articles are given a shiny black patina resembling graphite by firing them for a second time in paddy husks.

326 778 411 415 **Brass-founding.** One has only to explore the pagodas of Laos in order to realize that brass-founding used to be held in honor. Religious statues can be found which are sometimes of great [458] weight and usually of quite fine workmanship and taste, taking into account, to be sure, the quite special manner in which they conceive esthetics.

Although the crucibles have not been fired for many long years for casting such large pieces, the industry of brass-founding continues to be exercised by a certain number of specialists who are content with producing religious statuettes, necessities for betel, bells for elephants and livestock, various kinds of vases, cuspidors, etc.

This industry is an extremely ancient one in the land. It was certainly practiced during the Bronze Age, as is attested by the spear-heads, daggers, hatchets and halberds which have been found in northern Laos and which can now be seen in the Saint-Germain museum.

[821 172] It is interesting to note that the inhabitants of Laos attribute a meteoric origin to objects of the Bronze Age, as also to those of the Age of Polished Stone. They believe that these objects fall from the sky when it thunders, and that they are produced by lightning.

The following are some of the methods used by Laotian founders. Casting is always done by the lost wax process.

325 532 **Casting statues.** On an initial rough clay model, the artist applies a layer of fine, soft and well-pugged clay which he shapes in a more careful manner. Then after covering the statue, which is already much more than a rough draft, with a layer of bees-wax of the proper thickness, he finishes modeling the statue on the wax, inserting all the details and all the ornaments which it is to include. Polishing a bit here, engraving there, setting precious stones or simply glass between the eyelids to represent eyes, and inserting gold lips where the mouth is to be located, he gives the